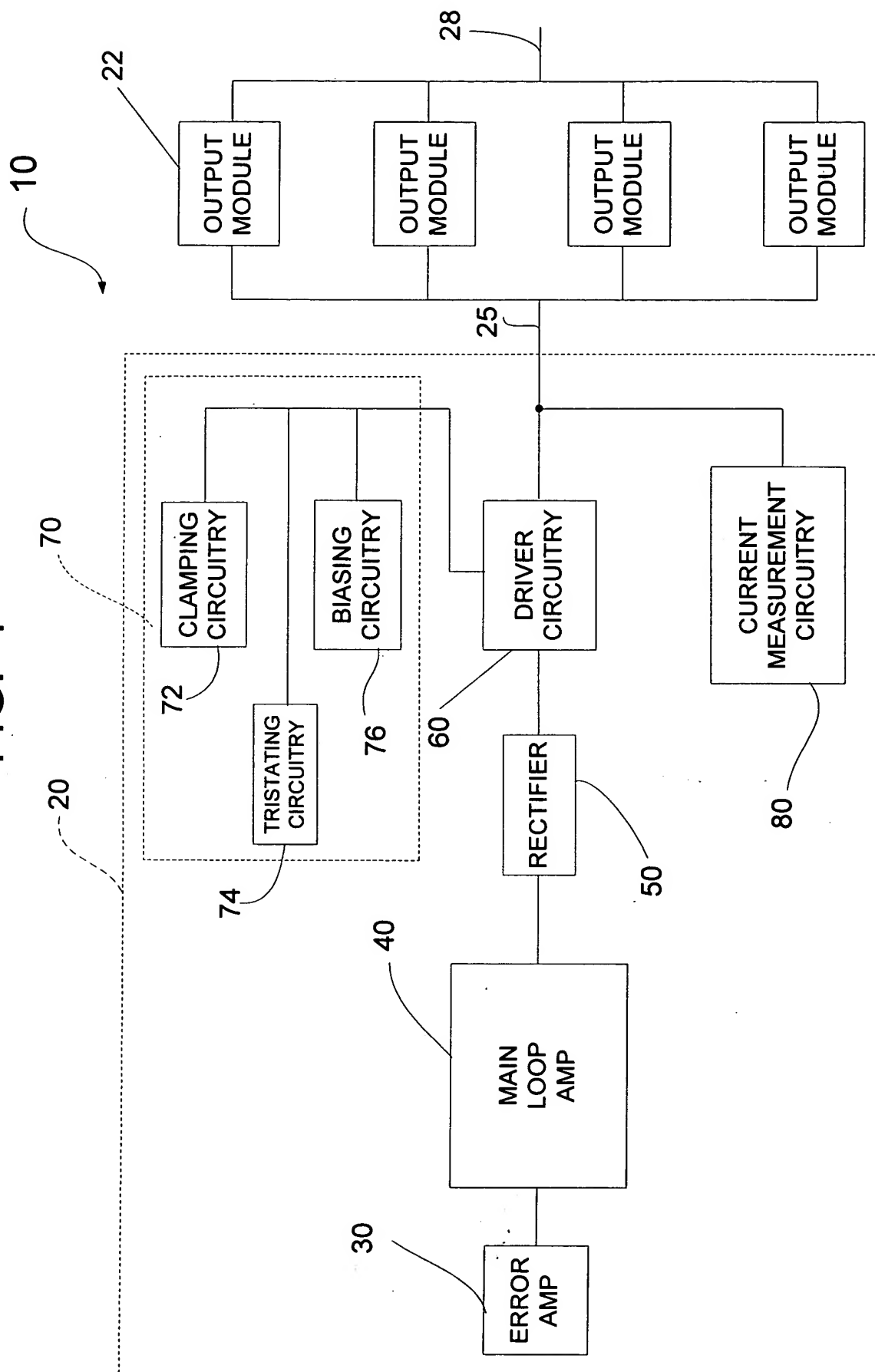


FIG. 1



#5

**FIG. 2**

FIG. 2 is a circuit diagram of a force-measuring system 20. The system includes a source circuit 70 and a sink circuit 72. The source circuit 70 contains a DAC2, a source clamp control circuit 74, and a source clamp 76. The sink circuit 72 contains a DAC3, a sink clamp control circuit 74, and a sink clamp 76. A differential amplifier 21 receives force sense and return sense signals. A force voltage DAC1 is also present. The source and sink circuits are connected to a central measurement circuit 40, which includes op-amp U0, U1, U2, U3, U4, and U7, along with various resistors (R1-R10, R23) and capacitors (Ccomp). The output of the measurement circuit is connected to an ADC1, which produces a current measurement output.

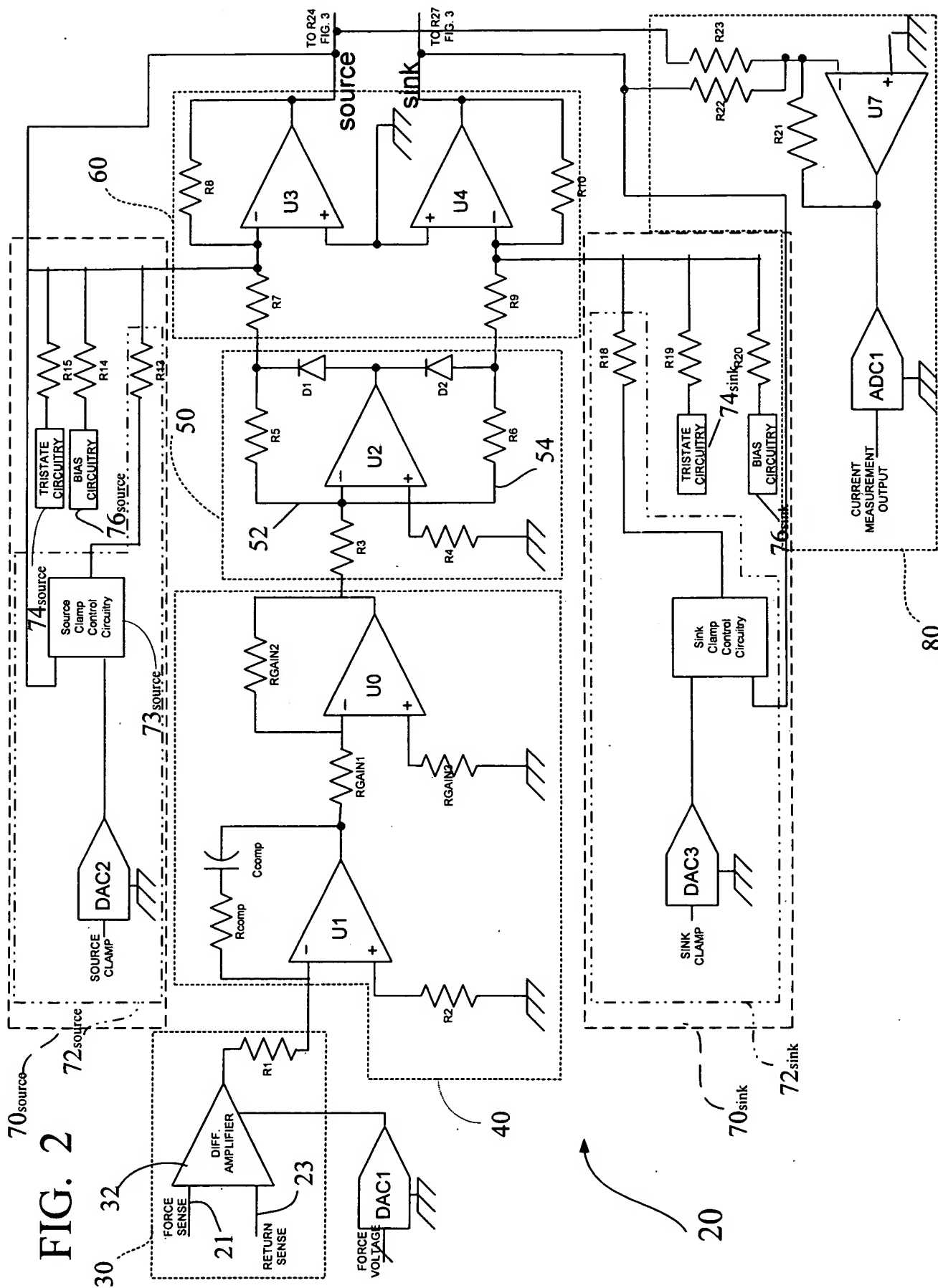


FIG. 3

22

